Glossary

Access Control List (ACL) Part of the Windows NT security API used to determine both access and monitoring properties for an object. Each ACL contains one or more ACEs (access control entries) that define the security properties for an individual or group. There are two major ACL groups: SACL (security access control list) and DACL (discretionary access control list). The SACL controls Windows NT auditing feature. The DACL controls access to the object.

ACL (See Access Control List.)

Active Server Pages (ASP) A special type of scripting language used by Windows NT Server equipped with Internet Information Server (IIS). This specialized scripting language allows the programmer to create very flexible Web-server scripts. The use of variables and other features, like access to server variables, allows a programmer to create scripts that can compensate for user and environmental needs, as well as security concerns. ASP scripts use HTML to display content to the user.

Active Template Library (ATL) A special set of header, source, object, and executable files created by Microsoft. The main purpose of ATL is to reduce the size and dependence of COM objects created for use in environments where memory and network bandwidth are a potential problem. For example, an ATL object won't rely on the Microsoft Foundation Classes (MFC). In many cases, the ATL executable is self-contained and doesn't rely on anything other than standard Windows core files. Although ATL executable files are smaller than their MFC counterparts, they're also more complex to develop and often require the developer to write more code in order to obtain a similar result.

ActiveX Document One of several COM-based enabling technologies used on the Internet to display documents in formats that the Internet doesn't support natively, such as the Word for Windows DOC-file format. Using ActiveX Document allows the OLE server to take over the browser's frame (menu and other features such as scroll bars) and present the document within the browser window.

API (See Application Programming Interface.)

Application Programming Interface (API) A method of defining a standard set of function calls and other interface elements. It usually defines the interface between a high-level language and the lower-level elements used by a device driver or operating system. The ultimate goal is to provide some type of service to an application that requires access to the operating system or device feature set.

ASP (See Active Server Pages.)

ATL (See Active Template Library.)

Binary Large Object (BLOB) A special field in a database table that accepts objects such as bitmaps, sounds, or text as input. This field is normally associated with the OLE capabilities of a DBMS, but some third-party products make it possible to add BLOB support to older database file formats such as Xbase DBF file format. BLOB fields always imply OLE client support by the DBMS.

Binary Value Refers to a base-2 data representation (base 2 means that there are only two values: 1 and 0) in the Windows registry. Normally used to hold status flags or other information that lends itself to a binary format.

Biometrics A statistical method of scanning individuals' unique characteristics, normally body parts, to ensure that they are who they say they are. Some of the scanned elements include voiceprints, irises, fingerprints, hands, and facial features. The two most popular elements are irises and fingerprints because they're the two that most people are familiar with using. The advantages of using biometrics are obvious. The user can't lose his or her identifying information (at least not very easily), and with proper scanning techniques the identifying information can't be compromised either.

Bitmap A file or OLE object containing the binary representation of a graphic image in raster format. Each pixel on the display is represented as one entry in the file. The size of the entry depends on the number of colors the image supports. Common sizes include monochrome (1-bit), VGA (4-bits), SVGA (8-bits), and true color (24-bits).

BLOB (See Binary Large Object.)

Browser A special application normally used to display data downloaded from the Internet. The most common form of Internet data is the HTML (hypertext markup language) page. However, modern browsers can also display various types of graphics and even standard desktop-application files such as Word-for-Windows documents. The actual capabilities provided by a browser vary widely depending on the software vendor and platform.

Cascading Style Sheets (CSS) A method for defining a standard Web-page template. This may include headings, standard icons, backgrounds, and other features that would tend to give each page at a particular Web site the same appearance. The reason for using CSS includes speed of creating a Web site (it takes less time if you don't have to create an overall design for each page) and consistency. Changing the overall appearance of a Web site also becomes as easy as changing the style sheet instead of each page separately.

CDS (See Cell Directory Service.)

Cell Directory Service (CDS) A part of the Open Software Foundation (OSF)-distributed computing environment (DCE) remote procedure call (RPC) network protocol. This component provides name-service provider support.

CGI (See Common Gateway Interface.)

COM (See Component Object Model.)

Common Gateway Interface (CGI) One of the more common methods of transferring data from a client machine to a Web server on the Internet. CGI relies on scripts to define how the data should be interpreted. There are two basic data transfer types: The user can send new information to the server or can query data already existing on the server. For example, a data entry form asking for the user's name and address would be an example of the first type of transaction. A search-engine page on the Internet (a page that helps the user find information on other sites) is an example of the second type of transaction. The Web server normally provides some type of feedback for the user by transmitting a new page of information once the CGI script is complete. This can be as simple as an acknowledgment for data entry or a list of Internet sites for a data query.

Component Object Model (COM) A Microsoft specification for an object-oriented code, data-encapsulation method, and transference technique. It's the basis for technologies such as OLE (object linking and embedding) and ActiveX (the replacement name for OCXs — an object-oriented code library technology). COM is limited to local connections. DCOM (distributed component object model) is the technology used to allow data transfers and the use of OCXs within the Internet environment.

Cookie One or more special files used by an Internet browser to store site-specific settings or other information specific to Web pages. The purpose of this file is to store the value of one or more variables so that the Web page can restore them the next time the user visits a site. A Webmaster always saves and restores the cookie as part of a Web-page programming task using a programming language such as JavaScript, Java, VBScript, or CGI. In most cases, this is the only file that a Webmaster can access on the client site's hard drive. The cookie can appear in one or more files anywhere on the hard drive, depending on the browser currently in

use. Microsoft Internet Explorer uses one file for each site and places the files in the Cookies folder that normally appears under the main Windows directory. Netscape Navigator uses a single file named COOKIE.TXT to store all of the cookies from all sites. This file normally appears in the main Navigator folder.

CSS (See Cascading Style Sheets.)

DAO (See Data Access Object.)

Data Access Object (DAO) An older data-access technology introduced by Microsoft that relies on the Microsoft Access JET engine for local data access. DAO does not provide remote access features, although some programmers have been able to establish unreliable connections with it. This technology has largely been replaced by ADO and OLE-DB.

DCOM (See Distributed Component Object Model.)

DDE (See Dynamic Data Exchange.)

DFS (See Distributed File Service.)

DHTML (See Dynamic Hypertext Markup Language.)

Distributed Component Object Model (DCOM) The advanced form of the component object model (COM) used by the Internet. This particular format enables data transfers across the Internet or other nonlocal sources. It adds the capability to perform asynchronous as well as synchronous data transfers — which prevents the client application from becoming blocked as it waits for the server to respond. See COM for more details.

Distributed File Service (DFS) A part of the Open Software Foundation (OSF) distributed computing environment (DCE) remote procedure call (RPC) network protocol. This component provides file management, location, access, and security support.

Distributed Network Architecture (DNA) A term used to describe Microsoft's vision of a three-tier development architecture. The three tiers include the user's desktop, business logic processing on a middle-tier server, and database processing on a back-end server. DNA is used to help emphasize various features of Microsoft products like Visual Studio and to help the developer modularize large-scale applications.

Distributed Password Authentication (DPA) A shared-secret authentication method originally started by some of the larger online services like CompuServe and MSN. It allows a user to use the same membership password to access a number of Internet sites when those sites are linked together as a membership

organization. In essence, this methodology replicates some of the same features that users can get when using the same password to access multiple servers on a local network. DPA relies on the Microsoft Membership Service for membership authentication and server-specific access information.

Distributed Time Service (DTS) A part of the Open Software Foundation (OSF) distributed computing environment (DCE) remote procedure call (RPC) network protocol. This component provides time synchronization and management support.

DLL (See Dynamic Link Library.)

DNA (See Distributed Network Architecture.)

DPA (See Distributed Password Authentication.)

DTS (See Distributed Time Service.)

Dynamic Data Exchange (DDE) The capability to cut data from one application and paste it into another application. You can cut a graphics image created with a paint program, for example, and paste it into a word-processing document. After it's pasted, the data doesn't reflect the changes made to it by the originating application. DDE also provides a method for communicating with an application that supports DDE programming and requesting data.

Dynamic HyperText Markup Language (DHTML) A special form of hypertext markup language (HTML) that allows the developer to add dynamic (changing) content in addition to the static content normally found on Web pages. See HTML for more details on HTML in general.

Dynamic Link Library (DLL) A specific form of application code loaded into memory by request. It's not executable by itself. A DLL does contain one or more discrete routines that an application may use to provide specific features. For example, a DLL can provide a common set of file dialogs used to access information on the hard drive. More than one application can use the functions provided by a DLL, reducing overall memory requirements when more than one application is running.

eXtensible Markup Language (XML) A standardized Web-page design language used to incorporate data structuring within standard HTML documents. For example, you can use XML to display database information using something other than forms or tables. It's actually a lightweight version of standardized generalized markup language (SGML) and is supported by the SGML community. XML will also support tag extensions that will allow various parts of a Web-based application to exchange information. For example, once a user makes a choice within a catalog, that information can be added to an order entry form with a minimum of effort on the part of the developer. Because XML is easy to extend, some developers look at it as more of a base specification for other languages rather than a complete language.

File Transfer Management System (FTMS) The Proginet Corporation introduced this ActiveX technology, which brings mainframe data to the desktop. Their Fusion FTMS works with any development language that supports OLE containers such as Delphi, C++, and PowerBuilder. Essentially, you place an ActiveX control on a form, define where to find the data, and then rely on the control to make the connection. Using this control reduces the amount of labor required to implement and maintain a mainframe connection. A special transfer server on the mainframe completes the package by automating all transfer requests. No longer does an operator have to manually download a needed file to the company's Web site before a client can access it. User's can directly access the data on the mainframe and download it to their local hard drive.

FTMS (See File Transfer Management System.)

GDI (See Graphics Device Interface.)

GDS (See Global Directory Service.)

Global Directory Service (GDS) A part of the Open Software Foundation (OSF) distributed computing environment (DCE) remote procedure call (RPC) network protocol. This component provides repository services for data on an enterprise level. It keeps track of network objects such as applications, files, printers, and people. GDS is normally used to name, describe, manage, locate, access, and secure these resources.

Globally Unique Identifier (GUID) A 128-bit number used to identify a component object model (COM) object within the Windows registry. The GUID is used to find the object definition and allow applications to create instances of that object. GUIDs can include any kind of object, even nonvisual elements. In addition, some types of complex objects are actually aggregates of simple objects. For example, an object that implements a property page will normally have a minimum of two GUIDs: one for the property page and another for the object itself.

Graphics Device Interface (GDI) One of the main root components. It controls the way that artistic graphic elements are presented onscreen. Every application must use the API provided by this component to draw or perform other graphics-related tasks.

GUID (See Globally Unique Identifier.)

HTML (See Hypertext Markup Language.)

HTTP (See Hypertext Transfer Protocol.)

HyperText Markup Language (HTML) **1.** A scripting language for the Internet that uses tags (keywords within angle brackets <>) to display formatted information onscreen in a nonplatform-specific manner. The nonplatform-specific nature of this scripting language makes it difficult to perform some basic tasks such as the placement of a screen element at a specific location. However, the language does allow for the use of fonts, color, and various other enhancements onscreen. There are also tags for displaying graphic images. Scripting tags for using more complex scripting languages such as VBScript and JavaScript were recently added; although not all browsers support this addition. The latest tag addition allows the use of ActiveX controls. **2.** This is one method of displaying text, graphics, and sound on the Internet. HTML provides an ASCII-formatted page of information read by a special application called a browser. Depending on the browser's capabilities, some keywords are translated into graphics elements, sounds, or text with special characteristics, such as color, font, or other attributes. Most browsers discard any keywords they don't understand. Browsers of various capabilities can explore the same page without problem. Obviously, there's a loss of capability if a browser doesn't support a specific keyword.

HyperText Transfer Protocol (HTTP) One of several common data transfer protocols for the Internet. This particular protocol specializes in the display of onscreen information such as data entry forms or information displays. HTTP relies on HTML as a scripting language for describing special screen-display elements, although you can also use HTTP to display nonformatted text.

IDE (See Integrated Development Environment.)

IIS (See Internet Information Server.)

Integrated Development Environment (IDE) A programming language front end that provides all the tools you need to write an application through a single editor. Older DOS programming language products provided several utilities — one for each of the main programming tasks. Most (if not all) Windows programming languages provide some kind of IDE support.

Internet Information Server (IIS) Microsoft's full-fledged Web server that normally runs under the Windows NT/2000 Server operating system. IIS includes all of the features that you'd normally expect with a Web server: FTP, HTTP, and Gopher protocols, along with both mail and news services. Both Windows NT Workstation and Windows 95/98 can run Personal Web Server (PWS), which is a scaled-down version of IIS.

Internet Server Application Programming Interface (ISAPI) A set of function calls and interface elements designed to make using Microsoft's Internet Information Server (IIS) and associated products such as Peer Web Server, easier. Essentially, this set of API calls provides the programmer with access to the server itself. Such access makes it easier to provide full-server access to the Internet server through a

series of ActiveX controls without the use of a scripting language. There are two forms of ISAPI: filters and extensions. An extension replaces current script-based technologies like CGI. Its main purpose is to provide dynamic content to the user. A filter can extend the server itself by monitoring various events like user requests for access in the background. You can use a filter to create various types of new services like extended logging or specialized security schemes.

ISA (See ISAPI Server Addition.)

ISAPI (See Internet Server Application Programming Interface.)

ISAPI Server Addition (ISA) A special form of ActiveX control in the DLL form that's placed on a Web server. The DLL gets called in one of several ways, for example, a request from a client or when a particular event takes place. There are two forms of ISA: filter and extension. A filter allows you to keep something out or in by monitoring events on your server. For example, you could create an ISA filter that keeps people out of your Web site unless they use the right password. Another type of filter could prevent files larger than a certain size from getting uploaded to the FTP server on your Web site. Extensions are more like applications or background processes. For example, you can create an extension that allows the user to interact with a database without resorting to using scripts. The same extension can create Web pages dynamically based on user input and the contents of the database on your server.

Local Procedure Call (LPC) A method of accessing a function that resides outside of the application's current process, but within a process found on the same machine.

LPC (See Local Procedure Call.)

Macro **1.** A form of programming that records keystrokes and other programming-related tasks to a file on disk, or within the current document. Most applications provide a macro recorder that records the keystrokes and mouse clicks you make. This means that you don't even have to write them, in most cases. Macros are especially popular in spreadsheets. Most macros use some form of DDE to complete OLE-related tasks. **2.** A series of recorded keystrokes used to perform a repetitive task. An example of a repetitive task using a macro is the heading used for correspondences. A macro can reduce the time required to produce a letter by setting up the heading and all of its formatting characteristics automatically. A macro does not need to exist in the same worksheet or file as the worksheet it operates on. You must load the macro into memory before using it. **3.** A shorthand method of representing a value or expression by placing the representation in a variable. Some systems substitute the contents of the variable for the variable. The macro function appears as an ampersand (&) in front of the variable.

MDI (See Multiple Document Interface.)

MFC Files (See Microsoft Foundation Class Files.)

Microsoft Foundation Class Files (MFC Files) The set of DLLs required to make many Microsoft applications work. These files contain the shared classes used as a basis for creating the application. For example, a pushbutton is a separate class within these files. Normally, you'll find the MFC files in the Windows SYSTEM folder — they use MFC as the starting letters of the filename.

Microsoft Share User Interface (MSSHURI) This module responds to external requests from the user for network resource configuration. Every time you right-click a resource and say that you want to share it, this module fields that request. It works with the access control module to set up password protection. An interface to the MPR and ADVAPI32.DLL allows the MSSHRUI to set the proper entries in the registry. You'll find it in the MSSHRUI.DLL file in your \SYSTEM folder. Windows NT has a similar version of this file called NTSHRUI.DLL. It provides many of the same capabilities with a heavier emphasis on security. You'll find NTSHRUI.DLL in the \SYSTEM32 folder.

Most Recently Used (MRU) Most applications today will track your most recently used files. In addition, you'll find this feature in operating systems such as Windows 95/98/NT/2000. Adding an MRU feature is almost automatic for developers, depending on the programming language they use and which wizard features they include. For example, adding an MRU to an application developed with Visual C++ is completely automatic; you only need to decide how many file names to include in the MRU list.

MRU (See Most Recently Used.)

MSSHURI (See Microsoft Share User Interface.)

Multiple Document Interface (MDI) A method for displaying more than one document at a time within a parent window. The Program Manager interface is an example of MDI. You see multiple groups within the Program Manager window.

National Language Support (NLS) A method of reconfiguring the keyboard and other system components to support more than one language through the use of code pages. Each code page defines a different language configuration. Unfortunately, this technique doesn't change the language used for display purposes. In other words, NLS won't cause your English-language version to suddenly display prompts and other text in German.

NDR (See Network Data Representation.)

Network Data Representation (NDR) A method for transmitting network data in a platform-independent manner. NDR determines how the various values get marshaled into data packets for network transmission. Microsoft uses NDR as part of its strategy for making the distributed component object model (DCOM) work.

NLS (See National Language Support.)

Object Linking and Embedding (OLE) The process of packaging a file name, application name, and any required parameters into an object, then pasting this object into a file created by another application. For example, you can place a graphic object within a word-processing document or spreadsheet. When you look at the object, it appears as if you simply pasted the data from the originating application into the current application (similar to DDE). The data provided by the object automatically changes as you change the data in the original object. Often you can start the originating application and automatically load the required data by double-clicking the object.

Object-oriented Programming (OOP) A method of programming that relies on objects. An object is one fully described section of code that includes properties and methods. Unlike procedural code, everything needed to describe a particular task is included in one object. OOP encourages code reuse and reduces interaction-type programming errors because each object is self-contained.

OCX (See OLE Custom eXtension.)

ODBC (See Open Database Connectivity.)

OLE (See Object Linking and Embedding.)

OLE Custom eXtension (OCX) A special form of VBX designed to make adding OLE capabilities to an application easier for the programmer. Essentially, an OCX is a DLL with an added programmer and OLE interface.

OOP (See Object-oriented Programming.)

Open Database Connectivity (ODBC) One of several methods for exchanging data between DBMSs. In most cases, this involves three steps: installing an appropriate driver, adding a source to the ODBC applet in the Control Panel, and using SQL statements to access the database.

PKI (See Public Key Infrastructure.)

Public Key Infrastructure (PKI) A protocol that allows two sites to exchange data in an encrypted format without any prior arrangement. The default method for initiating the exchange is to create a secure sockets layer (SSL) connection. The main difference between this technology and others on the market is that it relies on a public key system of certificates to ensure secure data transfer. The latest specification for SSL is SSL3, which the IETF is calling transport layer security (TLS) protocol. A newer addition to the mix is Private Communication Technology (PCT). PCT still uses public key encryption, but there are some distinct advantages to using it. One of the benefits of using PKI is that there's no online authentication

server required because the certificate is issued by a well-known certification authority (normally a company like Verisign) when the technology is used publicly.

RC (See Resource Container File.)

Remote Access The ability to use a remote resource as you would a local resource. In some cases, this also means downloading the remote resource to use as a local resource.

Remote Procedure Call (RPC) One of several methods for accessing data within another application. RPC is designed to look for the application first on the local workstation, and then across the network at the applications stored on other workstations. This is an advanced capability that will eventually pave the way for decentralized applications.

Request Header A part of a Web page that contains the data required to obtain information from the server. The request header normally contains the uniform resource locator (URL) for the required data along with the data formats that the client can accept. In addition, the client will normally provide the version of HTTP that it's using along with the name and version of the target browser. The request header can contain a wealth of other information as well—the exact contents depend on the version of data display language (like HTML) that the client supports as well as the kind of data requested.

Resource Container File (RC) The special file used by some programming languages to hold application resources like icons and bitmaps. The RC file is managed by the programming language IDE. Normally, you'll need to see only the graphic contents of the RC file, not the binary details.

ROT (See Running Object Table.)

RPC (See Remote Procedure Call.)

Running Object Table (ROT) A special Component Object Model (COM) table maintained by the operating system. Components that will allow a client to create a connection to a running instance need to register themselves in the ROT. There are two levels of registration: strong and weak. The main difference between strong and weak is that a strong registration will prevent an object from shutting down until all of the connected clients have also shut down. A weak reference will get shut down automatically once all strong references to the object are cleared. In most cases, you'll want to use the default registration level of weak.

SDI (See Single Document Interface.)

SGML (See Standard Generalized Markup Language.)

Single Document Interface (SDI) A method of displaying information in which each window is independent of the other — there is no main window.

SQL (See Structured Query Language.)

Standard Generalized Markup Language (SGML) A method for defining data within text-processing applications. This means not only defining content, but the appearance and positioning of that content on the page. In addition, SGML allows a developer to programmatically interact with the data and manipulate it in various ways. Both HTML and XML are derived from SGML, which is too complex to easily implement in places like the Internet where a lightweight protocol is required for data exchange. HTML is an implementation of SGML, whereas XML is a subset of SGML.

String Two or more characters connected that form a word or other character-based information.

String Value A plain text entry in the registry that provides a lot of information about the application and how it's configured. Hardware usually uses string values as well for interrupt and port information. String values are the one type of registry entry that you can read without interpretation. Other registry entry values include binary and DWORD.

Structured Query Language (SQL) Most DBMSs use this language to exchange information. Some also use it as their native language. SQL provides a method for requesting information from the DBMS. It defines which table or tables to use, what information to get from the table, and how to sort that information. A typical request will include the name of the database, table, and columns needed for display or editing purposes. A request can be filtered and the number of rows limited using special SQL features. SQL is also used to manipulate database information and allows the developer to add, delete, modify, or search records.

TCP/IP (See Transmission Control Protocol/Internet Protocol.)

Transmission Control Protocol/Internet Protocol (TCP/IP) A standard communication line protocol developed by the United States Department of Defense. The protocol defines how two devices talk to each other. Think of the protocol as a type of language used by the two devices.

UDP (See User Datagram Protocol.)

UI Thread (See User Interface Thread.)

Uniform Resource Locator (URL) A text representation of a specific location on the Internet. URLs normally include the protocol (`http://` for example), the target location (World Wide Web or www), the domain or server name (mycompany), and

a domain type (com for commercial). It can also include a hierarchical location within that Web site. The URL usually specifies a particular file on the Web server, although there are some situations in which a default filename is assumed. For example, asking the browser to find `http://www.mycompany.com` would probably display the default.htm file at that location.

URL (See Uniform Resource Locator.)

User Datagram Protocol (UDP) Allows applications to exchange individual packets of information over a TCP/IP network. UDP uses a combination of protocol ports and IP addresses to get a message from one point of the network to another. More than one client can use the same protocol port as long as all clients using the port have a unique IP address. There are two types of protocol port: well known and dynamically bound. The well-known port assignments use the ports numbered between 1 and 255.

User Interface Thread (UI Thread) The use of threads allows applications to perform more than one task at a time using multiple instruction execution paths. As the name suggests, User Interface (UI) threads are normally created to provide some type of user interface functionality within an application. You derive the UI thread from the CWinThread class instead of using a function, as with the worker thread. The InitIntance( ) method is the one CWinThread method that you must override because it's the first one called after the thread is created. The InitInstance( ) method should contain all of the code required to initialize your thread. Obviously, this means displaying a main dialog for the thread, if necessary. Terminating a UI thread is much the same as terminating a worker thread. However, a UI thread requires a little special handling if you want the caller to retrieve the exit code for the thread. First, you need to set the m_bAutoDelete data member to FALSE, which prevents the CWinThread object from deleting itself. Second, you'll need to manually delete the thread and release any memory that it uses.

Volatile Environment Normally, references a condition in which data could easily be lost as the result of some external force. For example, data stored in computer memory could be lost if the computer experiences a power failure. As a result, the data in a computer's memory is said to exist in a volatile environment.

Worker Thread The use of threads allows applications to perform more than one task at a time using multiple instruction execution paths. Worker threads are normally used for background tasks that require no or minimal user interaction. They're implemented as a function that returns a UINT result and accepts one argument of the LPVOID data type. A worker thread normally returns a value of 0, which indicates that it successfully completed whatever task it was designed to perform. You can return other values to indicate either errors or usage counts.

XML (See eXtensible Markup Language.)